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ABSTRACT

Published reports of curriculum innovation were used to develop an analysis of factors contributing to teacher reaction to change proposals. Premised on the theory that a more thorough understanding of naturally existing mechanisms operating in school environments would enhance the development of effective change strategies, the analysis focused on decision-making processes shaped by the ecology of the classroom and forming a cluster of factors labeled as "the ethic of practicality." Three dimensions are discussed: instrumentality, congruence, and cost. These dimensions define the content of the ethic and provide the basis for teacher reaction to proposals for curriculum change. (Author)

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TEACHER PRACTICALITY AND CURRICULUM CHANGE: AN ECOLOGICAL ANALYSIS

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Any curriculum proposal, regardless of its merits, will have little impact on schooling until it is used. But the weight of experience suggests strongly that it has been far easier to propose new curricula or ways to implement new proposals than it has to accomplish curriculum implementation. There is, on the one hand, a voluminous collection of prescriptive literature -- strategies for educational innovation that purport to tell practitioners how to accomplish change in concrete school settings. On the other hand, there is a growing body of descriptive studies which indicate that the actual amount of change in schools falls significantly below expectations. The life histories of innovation projects are, more often than not, records of disappointment and failure. Indeed, it seems that few authors of strategies for innovation can point to solid evidence that their particular set of procedures have in fact produced fundamental changes in the regularities of schooling.[1]

The most common reaction to this discrepancy between promise and achievement in the change field is a redoubled

search for procedural solutions. There is usually an increased expenditure of effort infused by a sense of immediacy and urgency. But the new efforts often proceed in the same nonproductive directions. Change strategists typically seize upon some dimension such as teacher attitude or competence which supposedly accounts for past failure. A prescription is then written for circumventing or neutralizing this newly-discovered obstacle to improvement. Predictably, the redesigned strategy produces effects which seldom differ substantially from those of previous change programs. The enterprise of schooling emerges unscathed and the search for effective change procedures begins anew. The present paper represents an attempt to break this cycle by adopting a more analytical stance all too often brushed aside in the rush to prescribe. The approach described here is based on the premise that if an effective change strategy is ever to be devised, it must be constructed on a more thorough understanding of the naturally existing mechanisms which operate in school environments. Statements of how change should occur are not very useful in interpreting how classroom teachers actually respond to influences which impinge upon their established habits and practices.

The present analysis is focused in particular on the decision-making processes which appear to underlie teacher reaction to change proposals. We contend that the

practicality ethic is a key link in the knowledge utilization chain in schools. The essential features of this ethic can be summarized briefly as follows. In the normal course of school events teachers receive a variety of messages intended to modify and improve their performance. If one listens carefully to the way teachers talk about these messages, it soon becomes clear that the concept "practical" is used frequently and consistently to label statements about classroom practices. In the context of the present analysis, this labeling represents an evaluative process which is a central ingredient in the initial decision teachers make regarding the implementation of a proposed change in classroom procedure. Messages which are seen as practical will be incorporated, at least tentatively, into teacher plans. The study of the practicality ethic, then, is the study of perceived attributes of messages and the way in which these perceptions determine the extent to which teachers will attempt to modify classroom practices.[2]

The present argument raises three interrelated issues. One is primarily definitional and is represented by the question: What is the practicality ethic? One is primarily environmental and asks: What factors shape this decision-making frame of reference? And the third is analytical, asking: Why is the ethic of practicality such a potent force in school change? Although all three questions are

treated to some degree in this essay, the first issue -- the nature and central components of the practicality ethic -- receives the most attention. The discussion is admittedly speculative. But our purpose is not to suggest solutions. It is to map an unfamiliar terrain in order to stimulate systematic research on the ways in which practicing teachers react to change.

Educational Change: The Typical and the Exceptional

Much of what is known about knowledge utilization processes in schooling derives from the literature on innovation projects. Although such information has value, there are serious limitations to the use of this literature in understanding the ethic of practicality. A brief delineation of these limitations will serve to clarify the focus of the present analysis.

Under normal circumstances, teachers are the final arbiters of classroom practice. This condition prevails for at least two reasons. First, the formal regulatory mechanisms in schools, as they affect the individual classroom, are notoriously sporadic and unsystematic. With few exceptions, teachers work in relative isolation from adult surveilance or intervention. Second, a norm of autonomy (or individualism) operating among teachers appears to have effectively minimized the impact of outside influences on the classroom. For reasons such as these Dreeben (1973) argues that although

schools resemble bureaucracies, teachers are simply not subject to bureaucratic rule in the substance of their work.

This environment of relative isolation and functional autonomy is disrupted fundamentally when an innovation project is initiated. In the first place, most school innovations (e.g., team teaching, open-space schools, nongraded plans) extend beyond the scope of the individual classroom and require the cooperation of groups of teachers. Secondly, because of the resource commitment necessary to launch such efforts, innovation projects often attract publicity. Finally, the requirement for formal evaluation which accompanies such projects increases the information flow surrounding participants' techniques and practices. However meritorious these conditions might be, they combine to increase visibility for members of a project staff. With increased visibility comes a reduction in the isolation and functional autonomy of individual teachers and an increase in external control over them. Innovation projects, in other words, generate a set of control mechanisms which are typically absent from the normal teaching environment. Such mechanisms increase teacher passivity and suspend normal teacher reactions to improvement directives. As Fullan (1972, p. 4) observes, the typical innovation strategy "usually turns out to be power-coercive <u>from the point of view of the user</u>."

For present purposes, the innovation literature lacks utility precisely because change projects tend to bypass teacher decision-making and hence mask the operation of the practicality ethic. This characteristic of innovation projects may account for the fact that so little is known about the user of educational innovations.[3] User reaction seems to be displaced by the conditions under which school change is traditionally studied. Failure to acknowledge teacher decision-making does not, however, neutralize its impact on change efforts. Although the mechanisms of an innovation project may cause teacher judgment to remain dormant, the ultimate fate of an innovation would seem to depend upon user decisions. This feature may explain why schools typically revert to conventional practices as the interest and intensity of the innovation project begin to decline.

Regardless of the actual consequences of teacher decisions -- a matter to be explored in more detail shortly -- the preceding analysis makes it clear that the innovation literature must be used with caution as a data source for investigating teacher decision-making processes in reaction to improvement messages. Of greater importance to the present effort to define the practicality ethic are teacher judgments under the normal environmental conditions of isolation and autonomy. These normal conditions of the teaching environment appear both to shape the practicality

ethic and enable it to function as a key factor in the knowledge utilization process in schools.

Images of the Teacher

Innovation strategies contain some inherent assumptions about recipients of change efforts. Unfortunately these assumptions are seldom made explicit in spite of the fact that such presuppositions determine much about the way in which a change strategy will be designed. As an introduction to the practicality ethic, this section focuses briefly on three images of the teacher which are represented in the change literature: (1) the rational adopter; (2) the stone-age obstructionist; and (3) the pragmatic skeptic.[4] Although necessarily abbreviated, this analysis clarifies further the nature of the practicality ethic and provides insight into the origins and the power of this evaluative process.

The most common image of the teacher in the innovation literature appears to be that of rational adopter. Most strategists, that is, are inclined to use highly formalized, rational models of how school change should proceed. Such models emphasize the intellectual processes which ought to determine the direction and course of school change. The ideal user is one who systematically follows a set of problem solving steps which include such activities as problem identification, data search, deliberation, implementation, and evaluation. Change strategies designed around this

image tend to stress the central importance of information in stimulating and effecting educational change.

The rational adopter image certainly appears to underlie the generalized instructional improvement efforts which occur on a regular basis in school systems. University courses, guest experts, and inservice "workshops" all rely heavily upon information dissemination and deliberative mechanisms to modify classroom practice. Presumably the weight of scholarly evidence, together with an appropriately inspirational rhetoric, will compel any "reasonable and intelligent" teacher to rush out and try the latest "new idea" in education.

It is not surprising that various strategies constructed around the rational adopter image seldom demonstrate overwhelming efficacy. Teachers, as well as most other people, simply do not conform to this highly idealized model of "rational" behavior. What is perhaps more puzzling is that change strategists continue to be startled by the fact that teachers use a variety of normative and pragmatic criteria in selecting classroom procedures.

One response to the failure of the rational adopter image is to implement training programs designed to teach users how to "deliberate rationally" (see, e.g., Connelly, 1972). Another, and probably more representative reaction, is to assume the more pessimistic image of the teacher as

stone-age obstructionist. This second teacher image, characteristic of many in the instructional technology field, calls attention to the folklore which appears to permeate most teacher discussions, to the nontechnical training of the majority of teachers, and to the problems inherent in trying to change adult behavior patterns (see, e.g., Glass, 1971). Change strategies built on this image seek ways to neutralize or bypass the teacher as an obstacle to educational advancement. The programmed instruction movement and the various national curriculum projects of the 1960s embodied to a considerable degree this "teacher-proof" approach to instructional innovation.

One of the more fascinating outcomes to emerge from the study of classrooms is that teachers adapt, rather than merely adopt, innovative practices. Studies of national curriculum projects have indicated that teachers vary widely in the ways in which they use these materials in the classroom. Gallagher's (1970) data indicate, for example, that there is no "new" biology but rather several curricula depending upon the idiosyncratic decisions teachers make in implementing the program. There is even evidence that teachers devise ways of compensating for the effects of programmed instruction on rate variation among students. Teachers have been found to use procedures which slow down the fast students and speed up the slow ones, thus reducing

the disparity which comes from students progressing at different rates (Carlson, 1965). The teacher-proof curriculum appears, then, to be simply an elusive ideal.

Although few in number, descriptive studies suggest that teachers react to change proposals with what might best be called pragmatic skepticism. This pragmatic image of the teacher incorporates at least three interrelated dimensions. First, teachers tend to describe their work in individualistic terms which emphasize the uniqueness of each classroom and the central role of personal preference (i.e., "personality") in the choice of teaching methods. Second, teachers consistently express a concern for immediate contingencies and consequences. As several observers have noted, teachers are considerably more interested in and responsive to immediate student reaction rather than evidence of long-term goal accomplishment. Finally, teachers are oriented toward the concrete and the procedural rather than the abstract and the general.[5] As will be discussed shortly, these dimensions of individualism, immediacy, and concreteness are an integral part of the practicality ethic.

Classroom Ecology and Teacher Behavior

The rational adopter and the stone-age obstructionist images obviously represent nearly opposite ends of a continuum of attitudes toward teachers embodied in the change literature. But these two polar attitudes do share a common

orientation toward the origins of teacher behavior, namely the kinds of people who are attracted to teaching and the type of training they receive. Personal qualities, in other words, are seen as the primary causes of the way in which teachers react to change proposals. The pragmatic skeptic viewpoint, on the other hand, emphasizes the role of ecological variables in shaping the way teachers think about and conduct their work. From the ecological perspective, teacher behavior, including reactions to change proposals, is seen as an outgrowth of efforts to meet environmental demands imposed by the distinctive ecology of the classroom. (For further discussion of this ecological approach to teacher behavior, see Doyle, 1975, and Doyle & Ponder, 1975).

The ecological model can be illustrated readily with reference to the pragmatic skeptic image itself. Teacher skepticism may well arise in part from what appears to be a common experience with innovative practices. Given the quality of most evaluative data, many procedural recommendations for the classroom simply lack ecological validity. That is, many proposed practices may fail to mesh with existing features established by the structure and flow of real environments. As several distinguished investigators have recently noted, we know so little about the work environment of teachers that it is nearly impossible to predict successfully what impact a particular change in procedure

will have on teaching conditions (see Dreeben, 1973; Schwab, 1970; Walton, 1974). The teaching environment is certainly discontinuous with conditions in other spheres of human activity and especially with those represented in many of the "controlled" settings in which innovative practices are "tested." These factors may explain in part why it appears to be difficult to anticipate the problems teachers will encounter with innovations once they are inaugurated (see Gross, et al., 1971). But it is at least understandable that the culture of schooling would embody a respectable amount of skepticism toward the latest promise to "revolutionize" teaching (on teacher skepticism, see Parkay, 1976).

A similar argument can be made for the ecological origins of individualism, immediacy, and concreteness. These features of teachers' view of their work would appear to be natural consequences of the fact that teachers are required to manage large groups of nonvolunteer students over long periods of time and under conditions of relative isolation from colleague interaction. Recent sociological investigations have generated evidence that the structure of teaching functions as a selective mechanism in shaping classroom practices (see Dreeben, 1973; Gracey, 1972; Haller, 1967; Lortie, 1971). The direction of this shaping appears to be very much in line with the pragmatism that Alan Tom (1973) found "unexpectedly" among teachers who

volunteered to work on the implementation of new social studies curricula. Proposals to improve the success rate of innovation projects by training teachers either to use more rational deliberation procedures or to acquire more refined implementation skills often discount the potential impact of the larger ecology on teacher attitudes and behavior.

The ecological viewpoint acquires particular meaning in the present context in relation to the earlier point that innovation projects involve fundamental disruption of the school environment. Depending on the size of the innovation project, this disruption would clearly have a dramatic effect on teachers and may well suspend normal response mechanisms, thereby making it difficult to study teacher decision-making practices. An additional consequence may be of even greater practical importance. Innovation projects typically function as temporary systems within educational organizations (see Miles, 1964b). Such temporary systems create ecological demands of their own and can, for short periods at least, engender and sustain response patterns which are congruent with these demands. Descriptive histories of innovation projects (see, e.g., Brenner, 1971; Gross, et al., 1971; Smith & Keith, 1971) have regularly shown, however, that as the temporary system is withdrawn -- frequently because external funding has been terminated -- behavior patterns

return to those which prevailed before the change project was initiated. The innovation thus gradually fades. Under these more normal conditions, in other words, conventional teacher decision-making processes can operate more decisively. Failure to acknowledge ecological effects -- the interaction of environment and teacher behavior -- apparently can have significant long-range implications for change strategies.

The Practicality Ethic

In context of this rather lengthy preamble, the ethic of practicality can now be defined with greater clarity. As noted in the beginning, the practicality ethic is manifested in the common teacher practice of labeling change proposals with the term "practical." The label "practical" is a nontechnical expression of the taken-for-granted world of the practitioner.[6] More specifically, the term is an expression of teacher perceptions of the potential consequences of attempting to implement a change proposal in the classroom. Recommendations perceived as practical are ones which a given teacher will most likely try to incorporate into classroom procedures. Those perceived as impractical have little chance of being tried unless control mechanisms, such as those which frequently accompany innovation projects, make teacher decision-making superfluous. Studies of the formation of teacher expectations (see Brophy & Good, 1974) further suggest that teachers are prone to make judgments

rapidly, with minimal experience or evidence. One would anticipate, then, that teachers will judge the practical merits of a proposal very soon after exposure to it. This tendency to make rapid decisions would appear to be further evidence of ecological effects. The very unpredictability of classroom environments would foster the ability to make on-the-spot judgments based on instinct rather than prolonged deliberation.

The major question now is: What determines practicality? In other words, what attributes of a change proposal tend to elicit the perception of practicality from teachers? This question cannot be answered here with any empirical adequacy since the issue itself has seldom been formulated in this manner. It is possible, however, to conceptualize several possible dimensions of the practicality ethic on the basis of existing evidence. Such a procedure should be especially useful in stimulating further research on what appears to be a key element in the innovation process.

The rational adopter image of the teacher carries with it the implication that a practical proposal is one which is in fact practical. That is, the weight of the evidence for a particular proposal ought to be a sufficient condition for its adoption. In spite of the prevalence of this image, it is clearly based on a simplistic view of human behavior. A more realistic position is that decisions about practicality

result from the complex interaction of several variables. In this initial attempt to conceptualize the practicality ethic, we have posited that teachers appear to use three general criteria to determine if a statement about classroom procedures qualifies as "practical." We have designated these criteria instrumentality, congruence, and cost.[7] Despite some overlap, these dimensions seem to represent distinct aspects of meaning associated with the ethic of practicality. In essence, these dimensions define the "rules" for applying the term to actual change proposals. What follows is a brief outline of the central features of these three categories.

Instrumentality. To qualify minimally as practical, a proposal must contain instrumental content. That is, a change proposal must describe an innovation procedure in terms which depict classroom contingencies. This does not imply that instrumentality is the most important dimension in the practicality ethic or even that instrumentality is a sufficient condition for judging the practicality of a recommendation. Instead, it suggests that instrumental content -- communicating the innovation in procedural, ecologically relevant terminology -- is a necessary condition for eliciting initial teacher evaluation of the practical merit of a change proposal. Statements of principle or specifications of desired outcomes are not "practical"

largely because they lack the necessary procedural referents. Thus such nonprocedural statements would seldom have an impact on classroom practice. A striking example of this effect is contained in Sheldon's (1864) description of his experiences with object teaching.[8] Sheldon exhorted teachers to learn the principles of object teaching and to use these principles to generate individual lessons. This approach, he claimed, was much preferred to the common practice of reenacting model lessons verbatim in the classroom. Such lessons, from Sheldon's perspective, were designed to illustrate underlying principles. But despite Sheldon's admonitions, the teachers continued reenacting the model lessons, apparently viewing them as immediately useful procedures for direct classroom application. The model lessons, in other words, had more instrumental value than the principles of object teaching.

The instrumentality dimension is particularly significant for two reasons. First, teachers often complain that innovations are seldom communicated clearly. This lack of clarity appears to be directly related to the absence of procedural content. Indeed, there is evidence that only after teachers have experienced the innovation in the actual classroom setting -- that is, have translated the proposal into concrete procedures -- does any full sense of understanding result (see Connelly, 1972; Gross, et al., 1971;

Smith & Keith, 1971; Tom, 1973). Without this degree of understanding communicated by procedural specifications, teacher judgment concerning the practicality of a change proposal is nearly impossible. It is at this stage of procedural implementation that the greater amount of difficulty is encountered in sustaining an organizational innovation. Second, converting principles and outcome specifications into appropriate procedures is a demanding task. Chesler (1971, p. 620), who has had considerable experience with innovation projects, maintains that translating "increased knowledge or new intentions . . . into behavioral implications relevant for the classroom is a highly developed skill, and most teachers do not have it." In this regard, Charters and Pellegrin (1973, p. 12) contend, on the basis of their analysis of four innovation attempts, that the "fallacious assumption that a statement of general, abstract program values and objectives will easily be translated into new and appropriate behavior patterns" is one of the barriers to innovation.

Evidence related to the communication of innovations and the task of conversion from principles to procedures strongly suggests that enactment in the setting is a major factor in interpreting the instrumentality of a change proposal. In their review of adoption and implementation of innovations, for example, Berman and McLaughlin (1976) found

that teachers strongly preferred concrete "how-to-do-it" workshops on innovation procedures rather than inspirational or theoretical sessions on the rationale for or projected outcomes of the innovation. This report also suggested that having teachers develop their own project materials rather than adopting pre-packaged materials can be crucial to the successful implementation of the project. As Berman and McLaughlin expressed it (p. 361), "The exercise of 'reinventing the wheel' can provide an important opportunity for staff to work through and understand project precepts and to develop a sense of 'ownership' in project methods and goals." And in a similar vein, Shipman (1974) repeatedly encountered the primacy of the need for enactment in the setting with the British Keele Integrated Studies Project:

> Many teachers only realized the importance of the theoretical discussion of integration after they had experienced the practical difficulties of implementing integrated studies in their schools . . . Again and again in this study the same sequence occurred. The (project) team had to explain what it was going to do before it could do it. The teachers started by doing it and only then looked for an explanation of why they were doing it that way (p. 28).

Instrumentality thus appears to be a necessary, though not sufficient, condition for the operation of the set of teacher judgements connoted by the practicality ethic. Proposals stated in an instrumental form will qualify for initial consideration as practical content. That is, the term "practical" is <u>potentially</u> applicable to instrumental

change proposals. Enactment of proposals provides the concrete referents which enable teachers to understand more fully the implications of the change proposals. Once these implications are understood, other criteria are activated to judge practicality in a particular context.

Congruence. To reiterate, instrumentality alone does not determine practicality. Teachers also make decisions about innovations in terms of the extent to which a proposed procedure is congruent with their perceptions of their own situations. This congruence dimension of the ethic of practicality appears to be comprised of a cluster of at least three elements, all focusing on the perceived "match" between the change proposal and prevailing conditions and all containing a highly personal emphasis. As one teacher in the Dienes and Connelly (1973) case study expressed it: "I can't believe that there is a machine that could be programmed in all the complexity necessary to teaching some of the concepts which I am teaching. . ." (p. 5).

The first of the elements in the congruence cluster relates to the discrepancy between the procedures contained in the change proposal and the way the teacher normally conducts classroom activities. Practices which depart radically from conditions which are normal for the teacher are usually viewed as impractical, often on grounds of possible adverse student reaction. This element of congruence

closely parallels the concept of compatibility found in sociological studies of innovation adoption and diffusion. Compatibility "concerns the similarity of the innovation to an existing product which it may eventually supplement, complement, or replace . . . (and) assumes that an innovation is perceived in a particular context and the perceived relationship between the innovation and other elements in that context influence the adoption and diffusion of the innovation" (Lin and Zaltman, 1973, p. 102-3). In the context of schooling, teachers frequently express concern for the way their students will react to an innovation (see, e.g., Jackson and Belford, 1965; Lortie, 1969; Tom, 1973; Shipman, 1974). While this concern is genuine, the explanation for it may evolve from the history of the teacher's behavior patterns and the effects of those patterns on interconnected processes and events. That is, the teacher's consistent utilization of certain behaviors in conducting classroom activities causes those behaviors to become acceptable and functional parts of the ecological system of the classroom (Copeland, 1976). Pupils become accustomed to these behavior patterns and develop appropriate response capabilities. Consequently, any recommendations for extreme procedural modifications not only demand changes in teacher behavior but also require the development of new response modes in students, thus threatening to produce

profound disruptions in the ecological system.

The second aspect of congruence involves perceptions of the origins of the innovation proposal and, in many cases, the spokesman for the innovation (see House, 1974). Teachers respond, in other words, to the nature of the setting in which the procedure was tried previously and to the experiential credentials and language of the person making the recommendation. The point of origin question is a significant one, as "the salient characteristics of an innovation as seen by the originator need not coincide with those perceived by an adopter or potential adopter" (Lin and Zaltman, 1973, p. 105). That is, the subjective perceptions of an innovation held by an originator and a potential adopter may not be symbolically compatible. As in industry, where 77% of the innovations used by the firm originate within the firm (Meyers and Marquis, 1969), innovations targeted for use in a particular school setting have a stronger probability of adoption when they originate within that setting or when they have been developed in a highly similar setting. A practice, for example, which is known to work in an upper-middle-class suburban high school may often be perceived as impractical by teachers in an inner-city school, especially when communicated by a university consultant. The criterion of experiential credentials is also a potent determiner of symbolic

compatibility, both because of context variables and because of the language of communication. The Rand study of implementation of educational innovations found that projects which experienced the smoothest implementation had directors whose experience in project methods and in the local setting allowed them to make very specific suggestions to teachers implementing the project (Berman and McLaughlin, 1976). In the Keele project as well as the projects in the Rand study, "the university was . . . associated with the theoretical, detached academic approach which contrasted starkly with the pragmatic, concrete interests of front-line teachers" (Shipman, 1974, p. 22). The language of the external consultants did not reflect the "folk wisdom of the classroom."

The final element in the congruence dimension apparently relates to role congruence. Teachers seem to judge procedures in terms of their compatibility with self-image and preferred mode of relating to students. Right to Read projects and career education projects, for example, have consistently encountered strong resistance among secondary school teachers of academic subjects as they attempted to persuade science or history teachers to view themselves as teachers of reading or career development (Berman and McLaughlin, 1976). This element of the congruence dimension is also especially evident in teacher reactions to behavior modification procedures. Although a teacher may agree that such procedures

"work," he or she may feel that the role of contingency manager does violence to the teacher-student relationship.

These brief comments suggest that congruence factors serve a conserving function in maintaining conventional classroom procedures. This conclusion is at least consistent with the prevailing evidence that most "changes" in school practice involve little more than a rearrangement of existing patterns and processes (see Orlosky and Smith, 1972). The existence of a conserving attitude among teachers is understandable in view of the fact that they bear the immediate brunt of any failure to maintain a functional school program.

Cost. The third dimension of the practicality ethic is best described by the term "cost." In our usage, cost is conceptualized as a ratio between the amount of investment required to implement an innovation and the return that may be realized. It refers primarily, in other words, to perceptions of the ease with which a procedure can be implemented and the potential return for adopting the innovation. Like instrumentality and congruence, the cost dimension also appears to be comprised of a cluster of factors. In this case, the cost factors all seem to relate to one of two major categories: amount of investment or returns to investment. Before delineating these categories, it is important to note that, while the notions of investment and return used here may involve monetary considerations,

they are not solely or even primarily financial matters. Instead, the cost dimension involves judgements about personal effort, social cost, and social reward.

Teacher judgements regarding the amount of personal effort required to implement an innovation appear to hinge on information about the complexity of the innovation. The judgement is one of continuity versus discontinuity, or the degree to which the recommended innovation requires the establishment of new behavior patterns (Robertson, 1971). For example, innovations such as differentiated staffing or team teaching are resisted actively unless the reward structure of the school clearly and consistently provides support for such change (Berman and McLaughlin, 1976). The number of participants involved in an implementation procedure may also increase the complexity of the innovation because of the greater number of intrusions into the daily routines of teachers (Lin and Zaltman, 1973). Conversely, the extent to which a proposed practice can be broken down into smaller units for short-term trials reduces the required investment of time and effort, thus increasing the probability that adoption will be attempted (see Zaltman, et al., 1973).

In addition to time and effort, the amount of investment can be calculated in terms of social costs. These cost factors are determined primarily by the reactions of students, colleagues, and administrators. The act of innovating, that

is, may have a dramatic impact on a teacher's status and social position within a group. In extreme cases, an attempt to change routine patterns may invite ridicule, ostracism, or even exclusion from the group (see Homans, 1961). Evidence cited previously indicates that teachers, perhaps because of the structure of teaching practice, are inclined to calculate social costs largely in terms of student reactions.

The factor of social cost introduces the element of perceived risk into the decisions teachers make about the overall cost of a particular innovation. Becker (1970) has suggested that the two most significant perceived risk attributes of innovations are the inherent opportunity for opposition and the possible consequences for reputation or position. Perceived risk interacts with other cost elements in a complex manner. It is conceivable, for example, that a proposed change in teaching practice which is low in the cost elements of time and effort would be viewed as too "expensive" if the consequences of failure are too adverse. The element of risk would seem to be especially salient in determining teacher judgements of proposed innovations since they are traditionally held responsible for any continuing disruptions in classroom life caused by modifications of existing procedures.

The second of the major categories in the cost dimension

concerns the returns to the investment. Information about this category derives primarily from the existence and maintenance of a reward system within the particular school environment that is conducive to the adoption of innovations. Pincus (1974) has postulated that schools typically do not have the kind of "market structure" that encourages innovations requiring complex changes in behavior or organizational relations. Instead, he suggested, schools tend to be self-perpetuating bureaucracies that have a captive clientele, are open to public scrutiny, and have decentralized governance systems. As such, the system prefers innovations that enhance image without changing the basic structure. Non-existent or inconsistent reward systems contribute heavily to teacher resistance to complex innovations, as innovation participants often view themselves as "overworked" in comparison to their colleagues (Shipman, 1974). And, since the amount of investment required rises as an implementation program progresses (see Gross, et al., 1971), the lack of a rewards system that can keep pace with expenditures of time and effort would seem to play an important role in the gradual decline which tends to characterize the latter stages of innovation projects.[9]

Teachers will, however, try new procedures when the perceived return potential outweighs the perceived investment required. Teacher perceptions of potential return apparently

are highly dependent on setting variables such as the organizational climate of the school and the characteristics of the school, district, and principal actors -- students, colleagues, and administrators. Stephens (1974), for example, found that teachers would adopt innovations, even despite moderate personal skepticism, if the reward structure of the school was made contingent upon innovativeness. It is important to note again that teachers are especially responsive to social rewards such as recognition by administrators and colleagues and student enthusiasm. As Berman and McLaughlin (1976) concluded:

> More specifically, high morale of teachers at a school, the active support of principals who appear to be the 'gatekeepers' of change, the general support of the superintendent and district officials . . . all increased the chances of teacher change and perceived success (p. 361).

Conclusion

To review, the major theme of this paper has been that curriculum implementation is determined in large measure by teacher reaction to change proposals and by the ways teachers use innovations in the classroom. Further, it is our contention that user reaction derives from the distinctive ecology of the classroom, an ecological system whose characteristics are set essentially by the often conflicting tasks of managing and instructing relatively large groups of nonvolunteer students during comparatively long periods of time. The classroom, in other words, is a behavior

setting in which the potential number of behavior episodes is high. Moreover, these behavior episodes often occur simultaneously, requiring the teacher to attend immediately to several tasks at the same time. Further, the flow of events in the classroom setting is often unpredictable and subject to external as well as internal disruption. Given this highly complex setting with its characteristics of immediacy, simultaneity, and unpredictability, it is hardly surprising that teachers develop, while learning the texture of the environment and adapting to its demands, procedures and responses that reduce that inherent complexity. One of those responses is a skepticism about potential disruptions in routine, a skepticism we posit is exhibited in the practicality ethic.

The dimensions of instrumentality, congruence, and cost would seem to define the fundamental content of the ethic of practicality. While these dimensions have been separated here for purposes of elaboration and discussion, they clearly overlap and are highly interrelated. It is obviously premature to draw profound implications from this preliminary inquiry into a largely neglected feature of the innovation process. However, the practicality construct, together with the ecological framework from which it derives, would seem to offer useful interpretive tools for understanding how teachers make decisions and eventually, how to construct materials and procedures which will have a greater potential for changing classroom practice.

Notes

[1]It is impossible to abstract here the vast quantity of writings in the educational innovation field. In addition to Giacquinta's (1973) review, there is a useful summary and extensive bibliography in Short (1973). The standard reference works are Havelock's two volumes (1969, 1970). For descriptive studies of innovation projects and processes, see Goodlad and Klein (1970), Gross, Giacquinta, and Bernstein (1971), Smith and Keith (1971), and Sarason (1971). These descriptive works are ably summarized and analyzed in Fullan (1972). The generalizations in this essay about the innovation process are based on these and related works although no attempt has been made to document each point in detail.

[2]The concept of "perceived attributes of messages" is adapted from Chapter 4 of Rogers and Shoemaker (1971). The study of practicality focuses, in other words, on what Sieber (1974) has called the "phenomenological world" of the teacher.

[3]Fullan (1972) places special emphasis on the need to study the user's perspective in change research. Sieber (1974) maintains that existing innovation research "fails to penetrate the mental world of the practitioner in order to reflect definition of needs, problem-solving patterns,

knowledge translation strategies, criteria for appraisal of options, perceptions of experts and other outsiders, and the like" (p. 66; emphasis added).

[4]This treatment of teacher images parallels in several important respects the approach of Sieber (1972), especially in the development of the "rational adopter" model. For an excellent analysis of how the "norm of rationality" functions in organizations, see Thompson (1967).

[5]This pragmatic skepticism image of the teacher is based on several data sources. For an analysis of "personal pragmaticism" among teachers, see Lortie (1975). Tom (1973) found that teachers used pragmatic criteria, concrete rather than abstract thinking, and estimates of student responsiveness to judge proposed innovations. Jackson and Belford (1965) have documented the general focus on immediate student reaction among experienced teachers. Lortie (1969) has argued that student reactions in the classroom constitute the major component of the perceived reward system in elementary teaching.

[6]The conceptual significance of the "taken-for-granted world" of the practitioner is delineated in Schutz (1962-1964) and Garfinkel (1972). The labeling process manifested in teacher use of the term "practical" would seem to be an instance of a more general phenomenon which Cicourel and his associates (1963, 1974) have called "ad hocing." Ad

hocing is in essence a process of coining nontechnical terms, such as "babyish," to describe features that teachers consider important to the conduct of their work. Ad hocing would even seem to be evident in the common use of such terms as "motivation" and "readiness" which for teachers appear to carry little of the technical denotation reflected in the literature of psychology (see Jackson, 1968). The non-technical terms in teacher language appear to be especially useful in capturing teachers' tacit understandings of variables which operate in classroom environments. The more technical language of psychology, developed to describe more controlled laboratory settings, is frequently inadequate to communicate the reality experienced by teachers in the classroom.

[7]For alternate lists of innovation characteristics, some of which parallel the dimensions employed in this essay, see Miles (1964a), Rogers and Shoemaker (1971), and Zaltman, Duncan, and Holbek (1973).

[8]A similar and more contemporary example of teachers reenacting procedural models in the classroom is reported by Bigelow (1971). He observed that teachers began to use some of the "sensitivity" exercises from the organization development intervention, even though classroom interaction was not a direct target of the intervention strategy.

[9]The theme of cost is prominent in House (1974), especially as it relates to the fact that innovations tend to make existing skills obsolete and hence require major re-training efforts. House notes that there are, under normal circumstances, few rewards for teachers which match the costs extracted by changing teaching practices. For an excellent review of the relation between cost and incentives in educational innovation, see Pincus (1974).

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